

21. An apparatus for programmatically detecting time-gap defects in a computer system having devices interconnected to one another, the apparatus comprising:

a memory device to store data structures comprising executables and operational data;

a processor operably connected to the memory device to process the data structures;

a controller to control an exchange of data between the devices; and

the memory device, wherein the data structures further comprise a detection module, executable by the processor and comprising:

an operation module to initiate an exchange of data between at least two of the devices,

a delay module to dynamically assign a value to the programmable delay to be imposed on the exchange, and

a verification module to determine whether an error occurred in the exchange, and remained undetected by the controller.

22. The apparatus of claim 21, wherein the detection module is further programmed to receive a user input for controlling the dynamic assignment of the value of the programmable delay.

23. The apparatus of claim 21, wherein the detection module is programmed to select the value iteratively.

24. The apparatus of claim 23, wherein the detection module is programmed to iteratively select by a marching method over a time domain.

25. The apparatus of claim 24, wherein the marching method comprises selecting an initial value and an increment, and stepping across at least a portion of the time domain by adding the increment to the value to select a new value.

26. The apparatus of claim 23, wherein iteratively selecting comprises dynamically bracketing the value of the programmable delay above which time gap errors occur and remain undetected by the controller.

27. The apparatus of claim 21, wherein the detection module is programmed to dynamically bracket the value of the programmable delay below which time gap errors do not occur and remain undetected by the controller.

28. The apparatus of claim 21, wherein the detection module is programmed to iteratively select the value of the programmable delay above which time gap errors occur.

29. The apparatus of claim 21, wherein the detection module is programmed to iteratively select the value of the programmable delay below which time gap errors do not occur.

30. An article including a computer readable medium storing data structures comprising executables and operational data, the data structures comprising:

a controller driver to exchange data between devices in a computer system, and to detect errors occurring in the exchange;

a detection module, executable to detect errors occurring due to a time gap and remaining undetected by the computer system, the detection module comprising:

an operation module to initiate an exchange of data between at least two of the devices;

a delay module to dynamically assign a value of a delay time to be interposed in the exchange; and

a verification module to determine whether an error occurred due to the delay time in the exchange and remained undetected to the computer system.

31. The article of claim 30, wherein the detection module is programmed to iteratively bracket a first value of the delay time, above which time gap errors occur and remain undetected by the controller, and a second value of the delay time, below which time gap errors do not occur and remain undetected by the controller.

32. A method for programmatically detecting time-gap defects in components of a computer system, the method comprising:

providing a detection module to execute on a processor to initiate, detect, and verify reporting of errors that remain undetected to the computer system due to time gaps in data exchanges between devices in the computer system;

loading the detection module onto a computer system comprising a processor, a memory, devices connected to exchange data with one another, and controllers for controlling the exchange of data therebetween; and

executing the detection module by the processor to detect errors occurring and remaining otherwise undetected by the computer system due to the time gaps.

33. The method of claim 32, wherein executing the detection module further comprises:

initiating an exchange of data between the devices in the computer system;

interposing a programmatically controlled delay in the exchange;

checking the data for errors precipitated by the programmatically controlled delay; and

identifying devices incurring errors that remain undetected by the computer system.

34. The apparatus of claim 32, further comprising receiving operating parameters directly from a user to control a programmable delay to precipitate the errors.

35. The apparatus of claim 32, further comprising iteratively selecting the value of a programmable delay.